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Effect of nutrients on the accumulation of glutamyl endopeptidase in the culture liquid of bacillus intermedium 3-19

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Abstract

The effect of nutrients and growth conditions on the accumulation of glutamyl endopeptidase in the culture liquid of Bacillus intermedius 3-19 was studied. Glucose and other readily metabolizable carbon sources were found to suppress the production of the enzyme, while inorganic phosphate and ammonium cations enhanced it. Protein substrates, such as casein, gelatin, and hemoglobin, did not affect enzyme production. Some bivalent cations (Ca2+, Mg2+, Co2+) increased the production of glutamyl endopeptidase, but others (Zn2+, Fe2+, Cu2+) acted in the opposite way. The rate of enzyme accumulation in the culture liquid increased as the growth rate of the bacterium decreased, so that the maximum enzyme activity was observed in the stationary growth phase. Based on the results of this investigation, an optimal medium for the maximum production of glutamyl endopeptidase by B. intermedius 3-19 was elaborated.

Keywords

Biosynthesis, Catabolite repression, Glutamyl endopeptidase, Growth conditions, Proteinase